FIG. 1

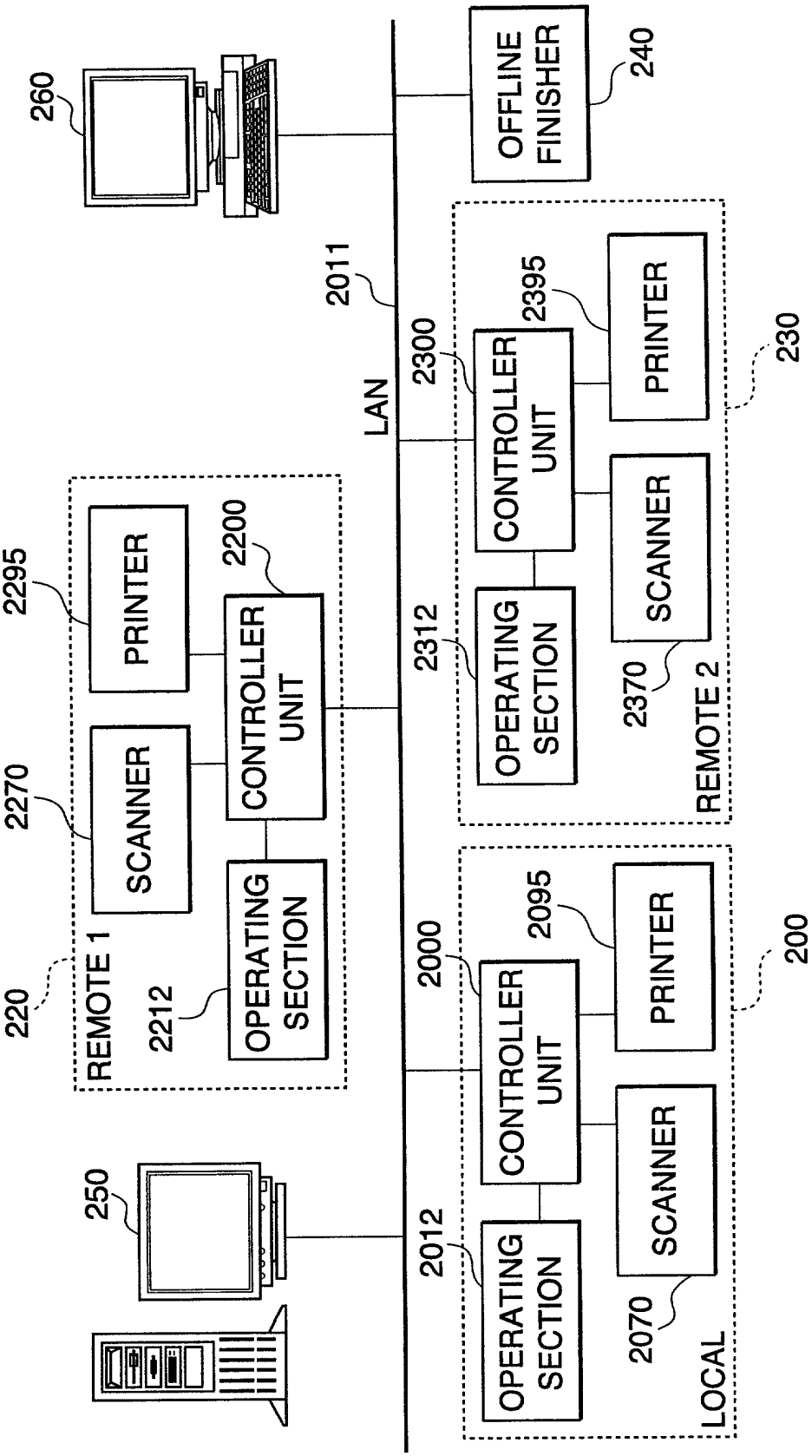

260
OFFLINE FINISHER
240
2011
LAN
2300
CONTROLLER UNIT
2395
PRINTER
230
OPERATING SECTION
2312
SCANNER
2370
REMOTE 2
2295
PRINTER
2200
CONTROLLER UNIT
2270
SCANNER
OPERATING SECTION
2212
220
REMOTE 1
250
2012
OPERATING SECTION
2000
CONTROLLER UNIT
2095
PRINTER
200
2070
SCANNER
LOCAL

FIG. 2

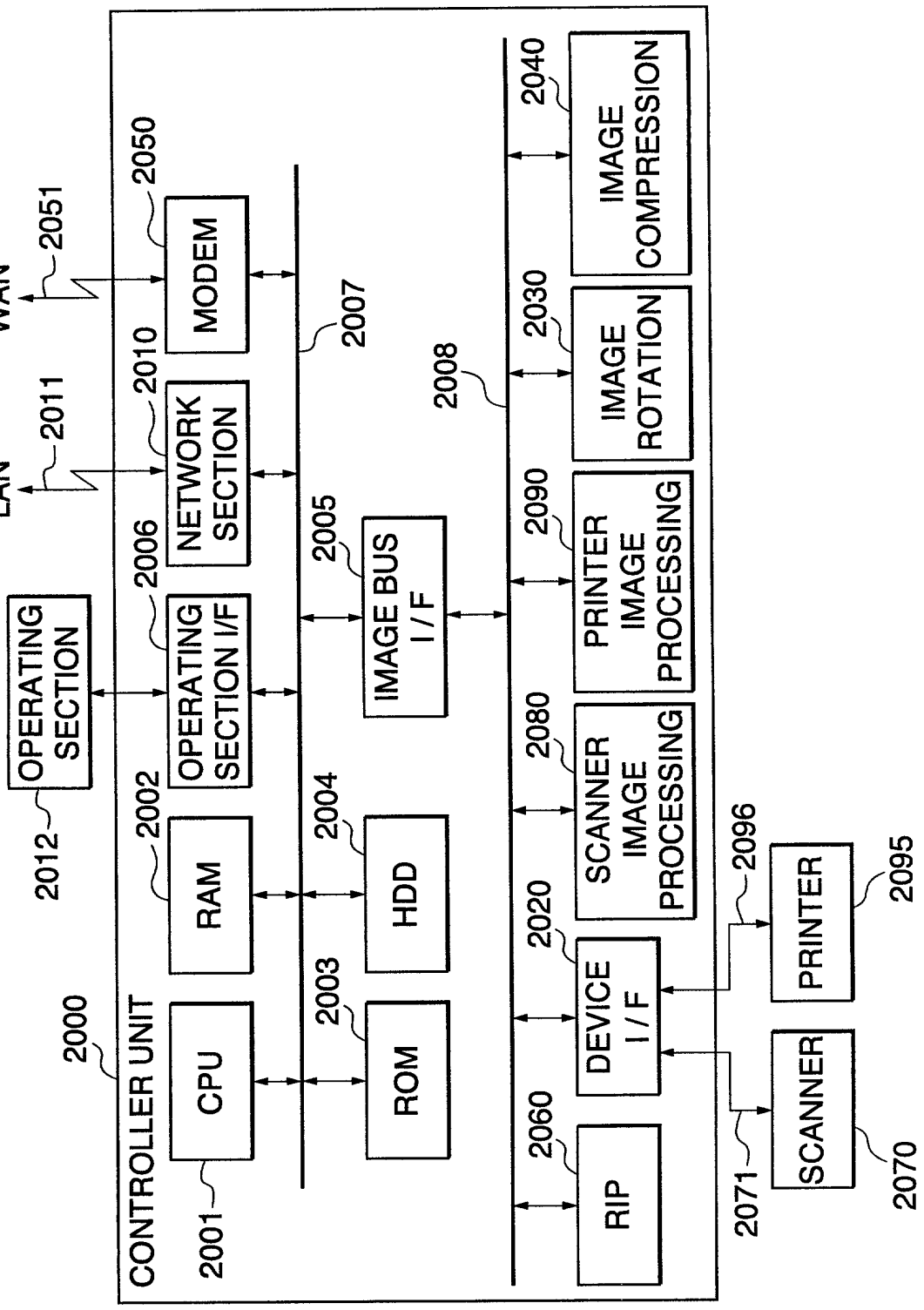

CONTROLLER UNIT
2000
CPU
2001
RAM
2002
ROM
2003
HDD
2004
IMAGE BUS I / F
2005
OPERATING SECTION I/F
2006
NETWORK SECTION
2010
MODEM
2050
2007
2008
OPERATING SECTION
2012
LAN
2011
WAN
2051
RIP
2060
DEVICE I / F
2020
SCANNER IMAGE PROCESSING
2080
PRINTER IMAGE PROCESSING
2090
IMAGE ROTATION
2030
IMAGE COMPRESSION
2040
2096
PRINTER
2095
2071
SCANNER
2070

FIG. 3

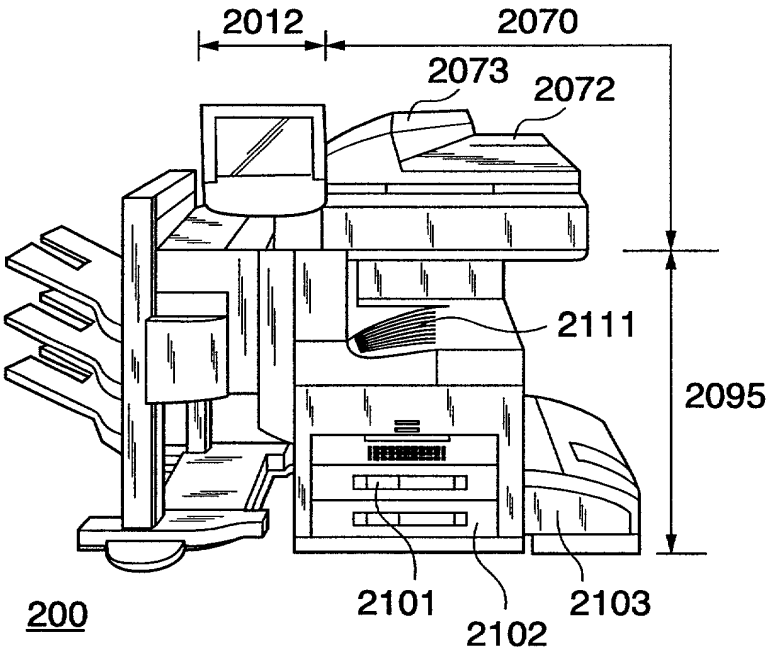


FIG. 4

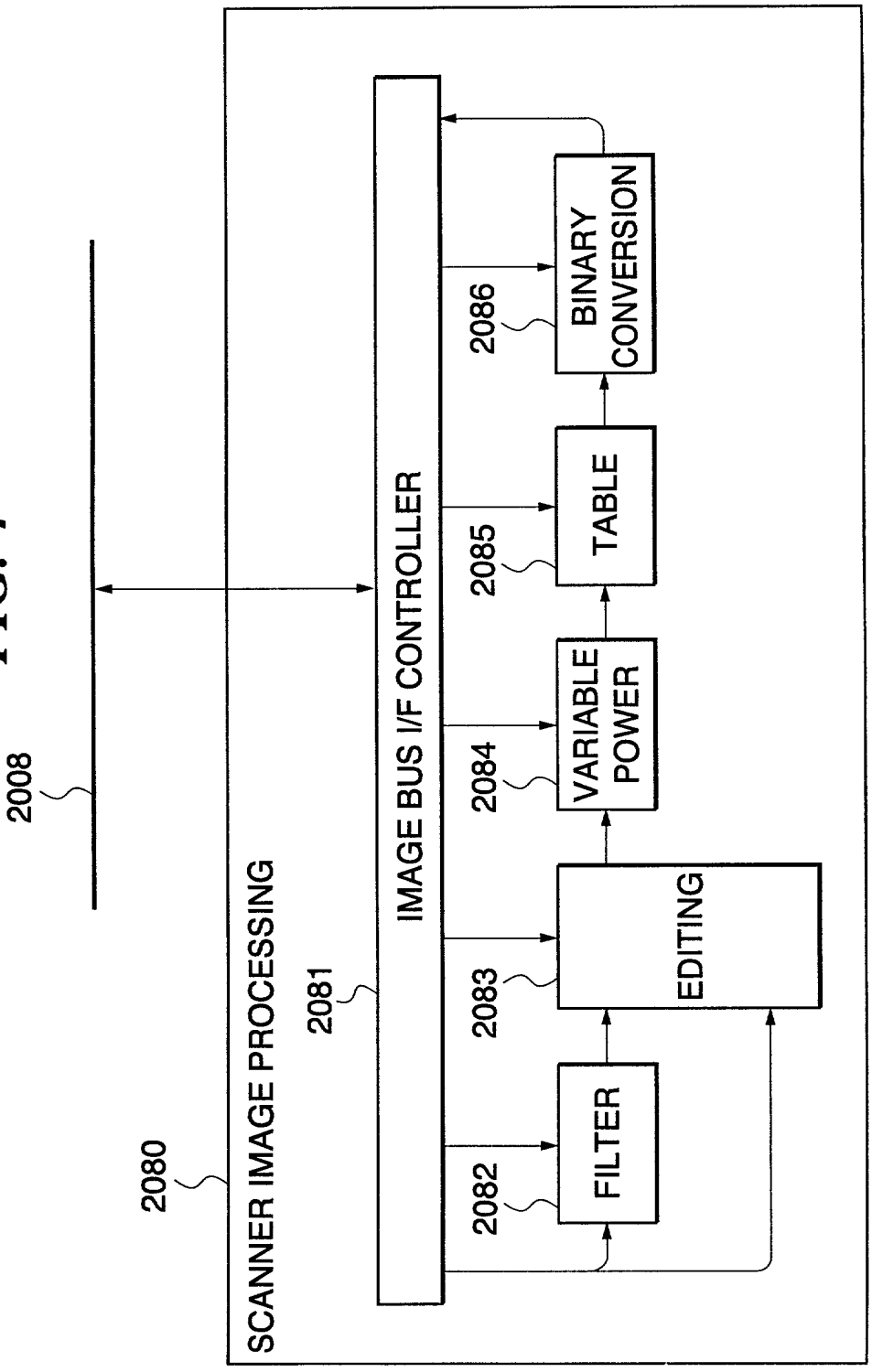

2008
SCANNER IMAGE PROCESSING
2080
IMAGE BUS I/F CONTROLLER
2081
FILTER
2082
EDITING
2083
VARIABLE POWER
2084
TABLE
2085
BINARY CONVERSION
2086

FIG. 5

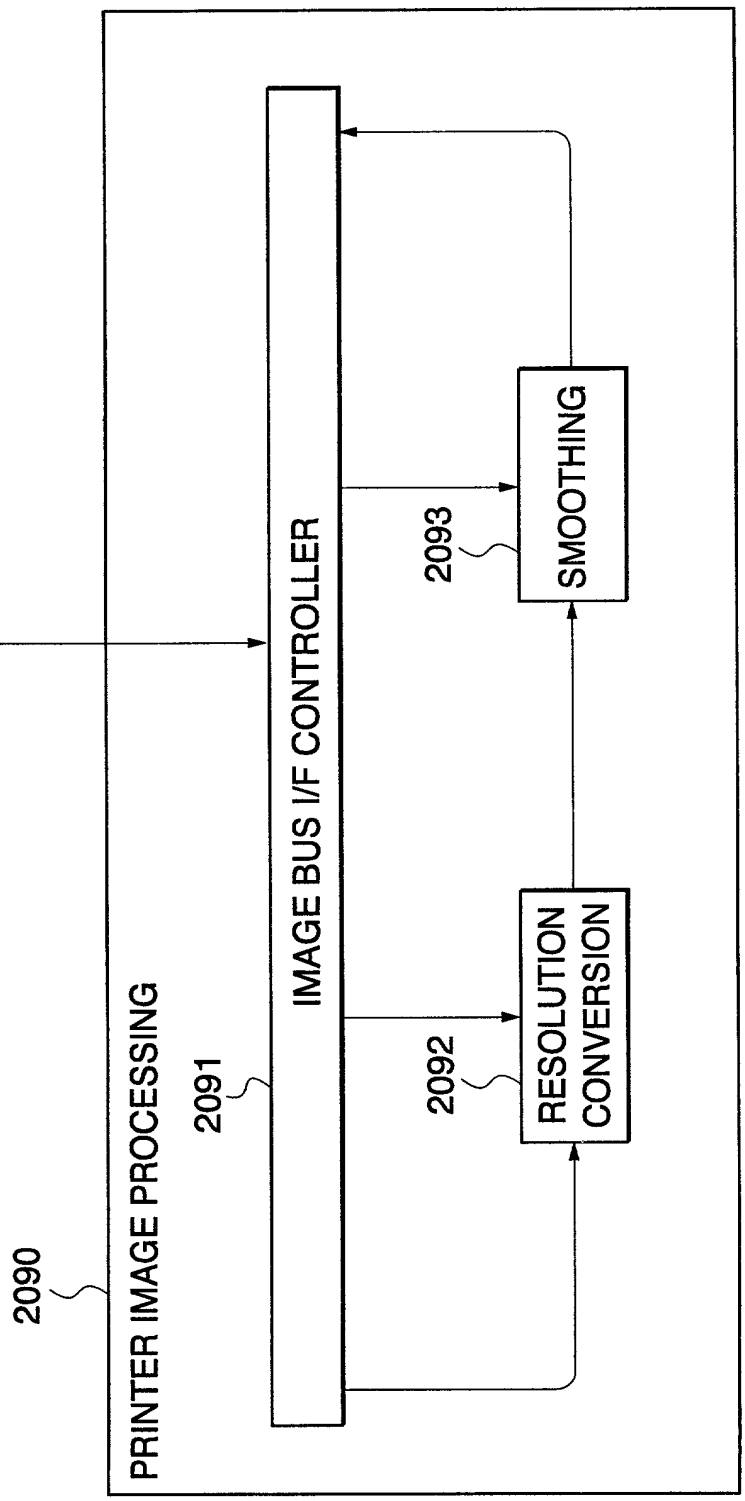

2008
2090
PRINTER IMAGE PROCESSING
2091
IMAGE BUS I/F CONTROLLER
2092
RESOLUTION CONVERSION
2093
SMOOTHING

FIG. 6

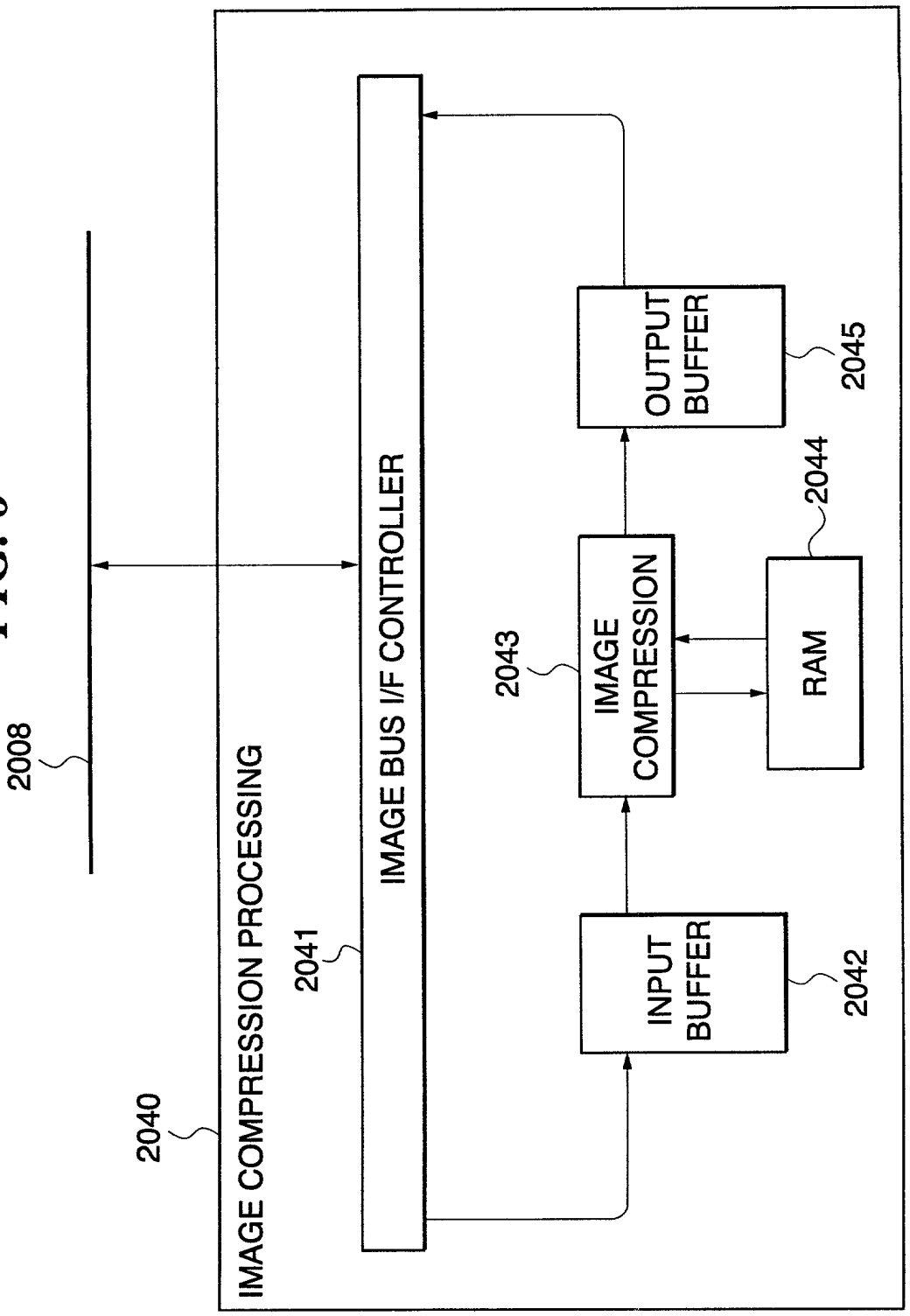

2008
IMAGE COMPRESSION PROCESSING
2040
IMAGE BUS I/F CONTROLLER
2041
INPUT BUFFER
2042
IMAGE COMPRESSION
2043
RAM
2044
OUTPUT BUFFER
2045

FIG. 7

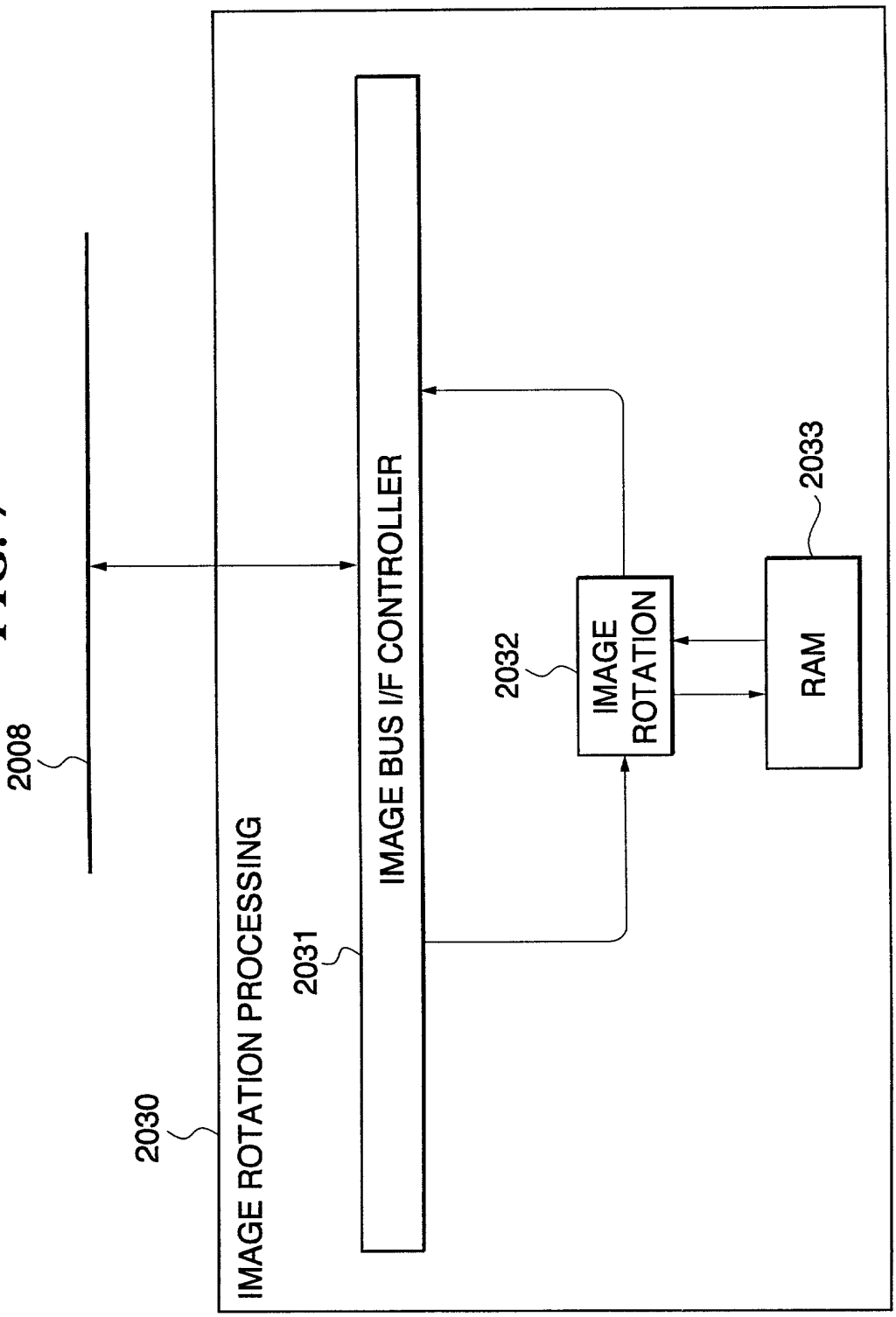

2008
2030
IMAGE ROTATION PROCESSING
2031
IMAGE BUS I/F CONTROLLER
2032
IMAGE ROTATION
2033
RAM

FIG. 8

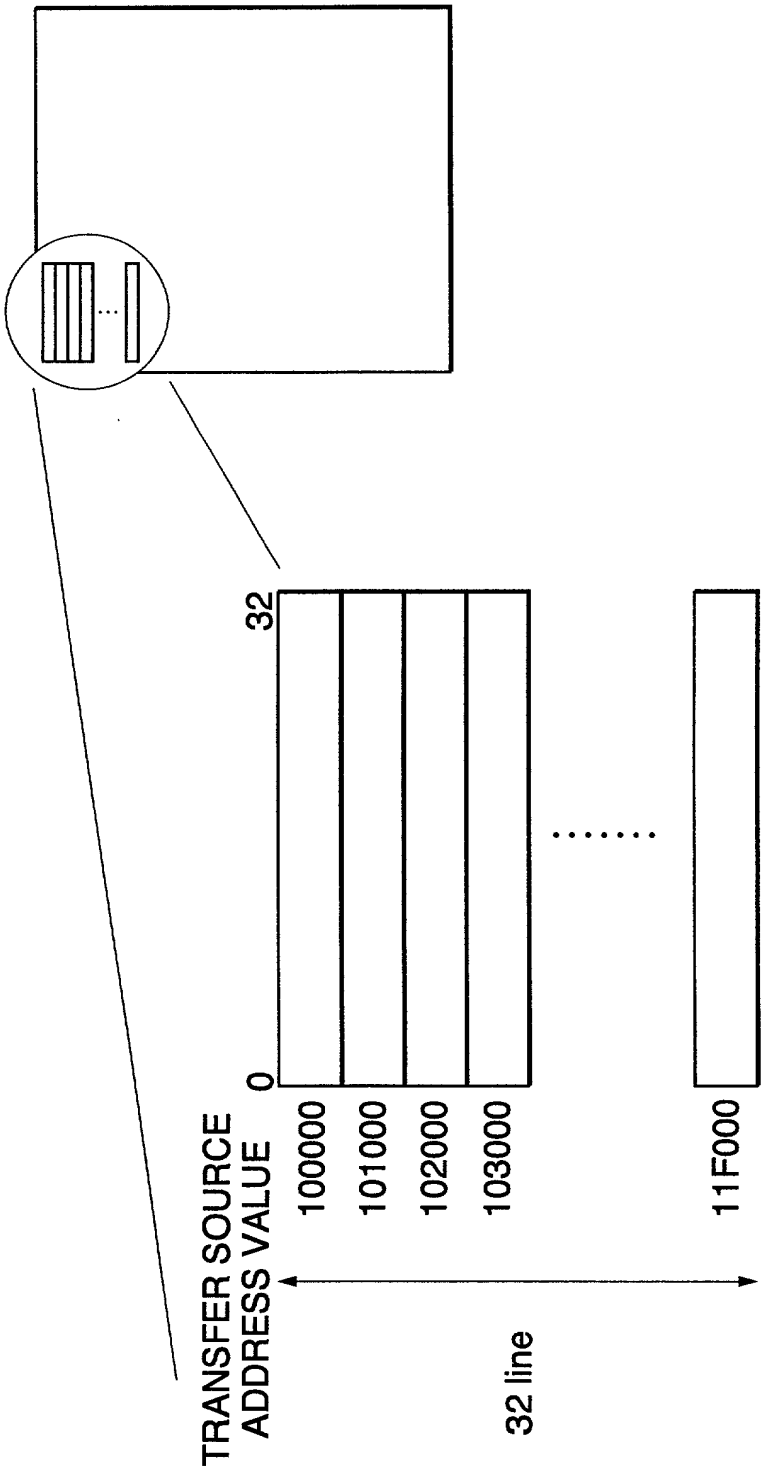

32
0
TRANSFER SOURCE ADDRESS VALUE
100000
101000
102000
103000
11F000
32 line

FIG. 9

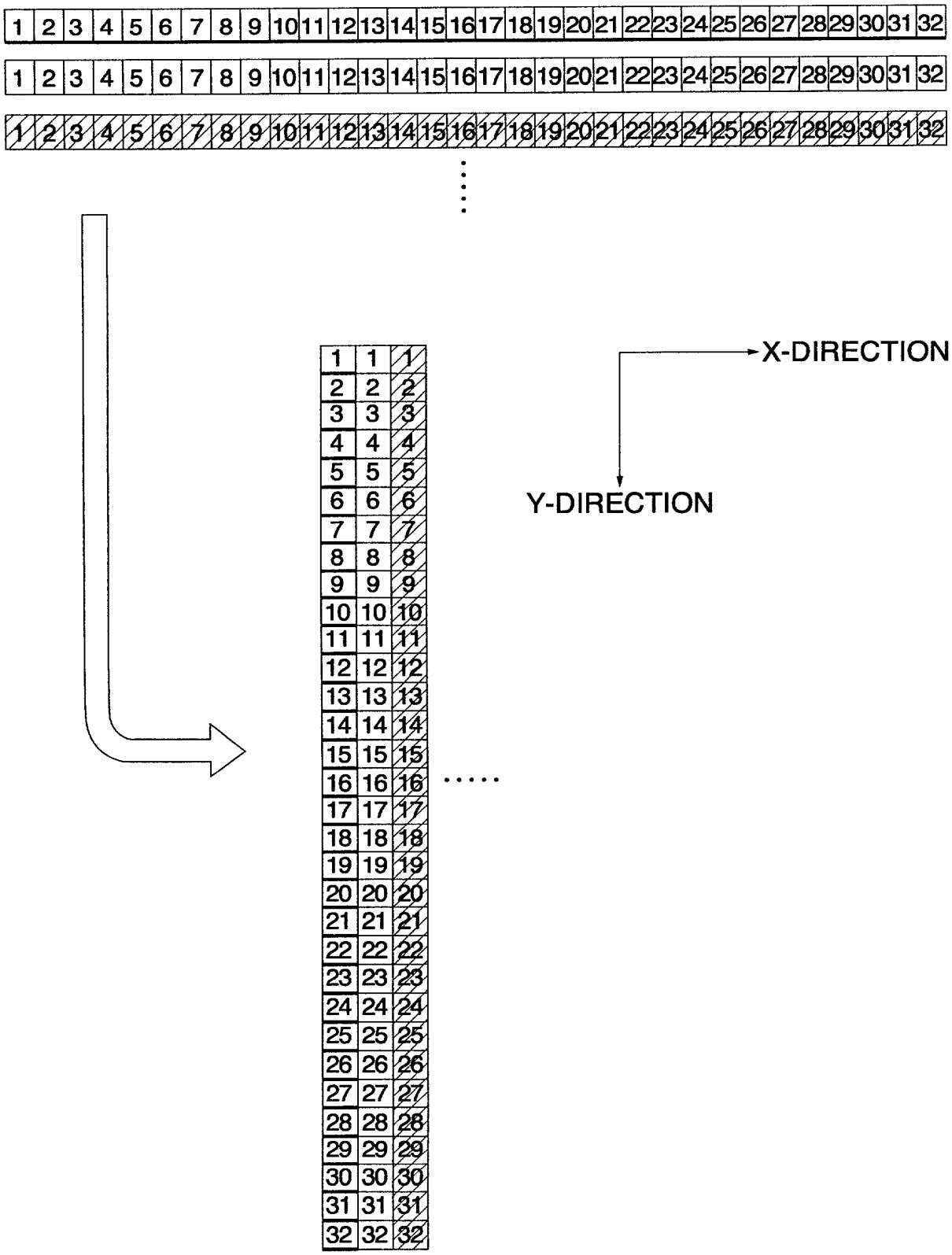

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
X-DIRECTION
Y-DIRECTION
1 1 1
2 2 2
3 3 3
4 4 4
5 5 5
6 6 6
7 7 7
8 8 8
9 9 9
10 10 10
11 11 11
12 12 12
13 13 13
14 14 14
15 15 15
16 16 16
17 17 17
18 18 18
19 19 19
20 20 20
21 21 21
22 22 22
23 23 23
24 24 24
25 25 25
26 26 26
27 27 27
28 28 28
29 29 29
30 30 30
31 31 31
32 32 32

FIG. 10

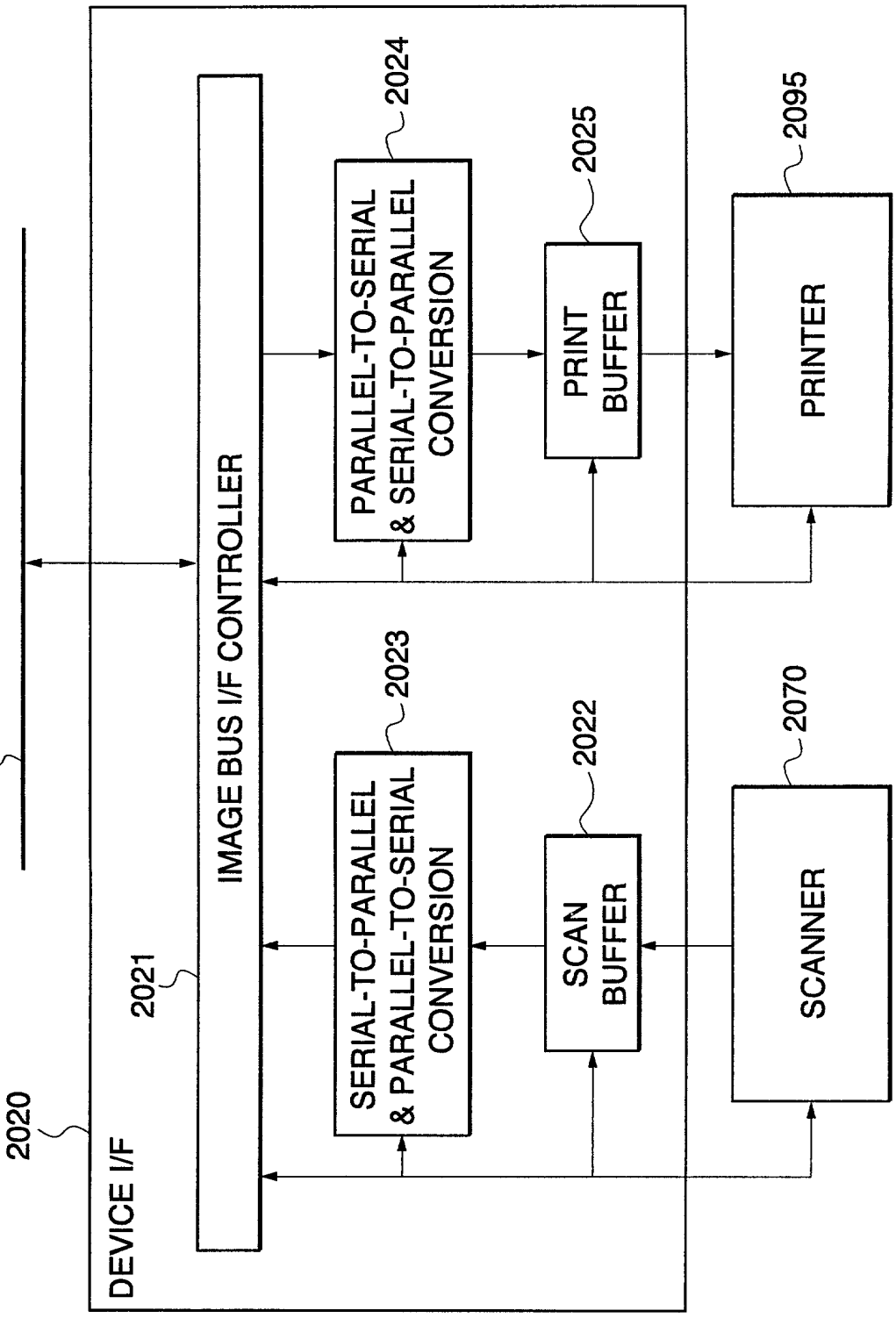

2008
2020
DEVICE I/F
2021
IMAGE BUS I/F CONTROLLER
2024
PARALLEL-TO-SERIAL & SERIAL-TO-PARALLEL CONVERSION
2025
PRINT BUFFER
2095
PRINTER
2023
SERIAL-TO-PARALLEL & PARALLEL-TO-SERIAL CONVERSION
2022
SCAN BUFFER
2070
SCANNER

FIG. 11

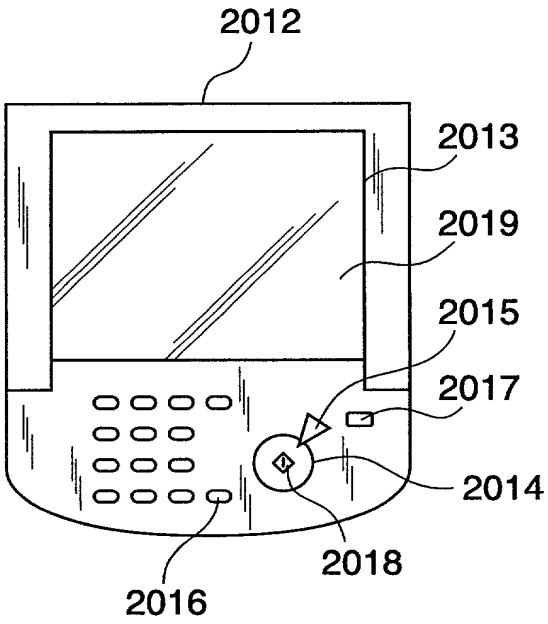


FIG. 12

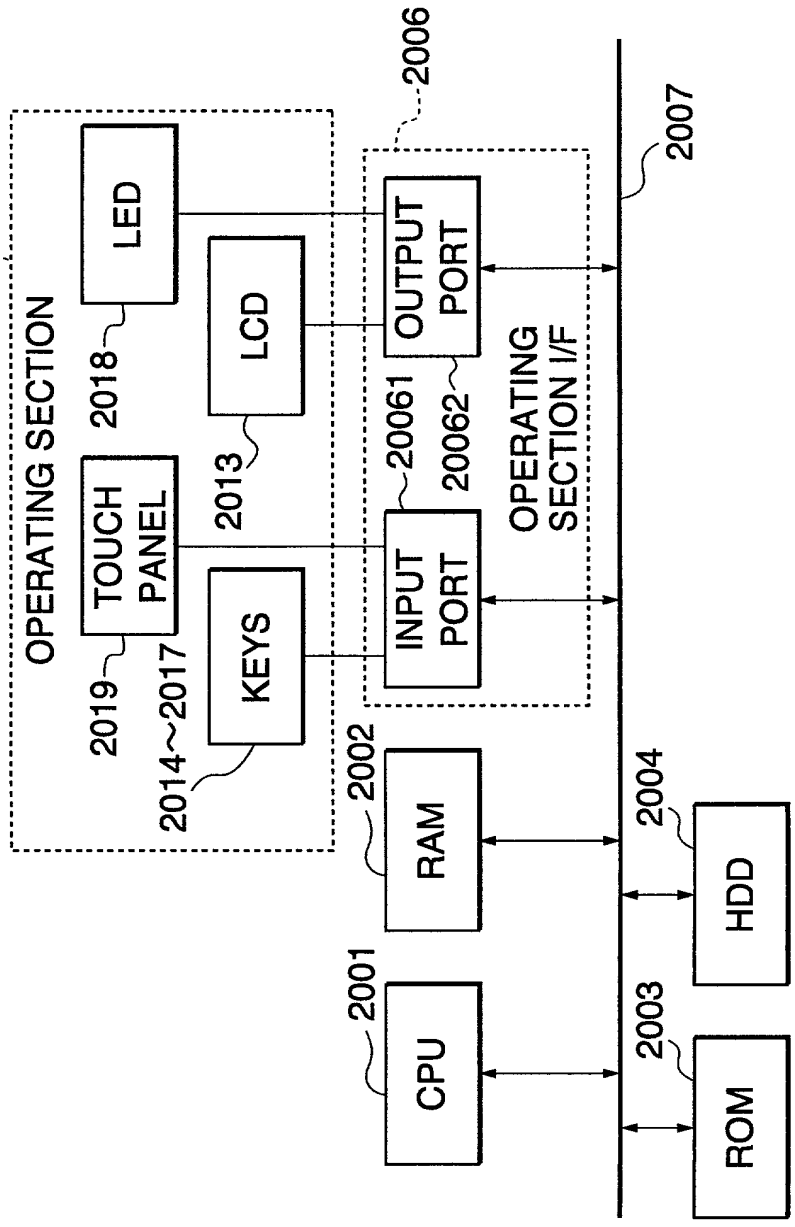

2012
OPERATING SECTION
LED
2018
LCD
2013
TOUCH PANEL
2019
KEYS
2014~2017
2006
OUTPUT PORT
20062
20061
INPUT PORT
OPERATING SECTION I/F
2007
RAM
2002
HDD
2004
CPU
2001
ROM
2003

FIG. 13

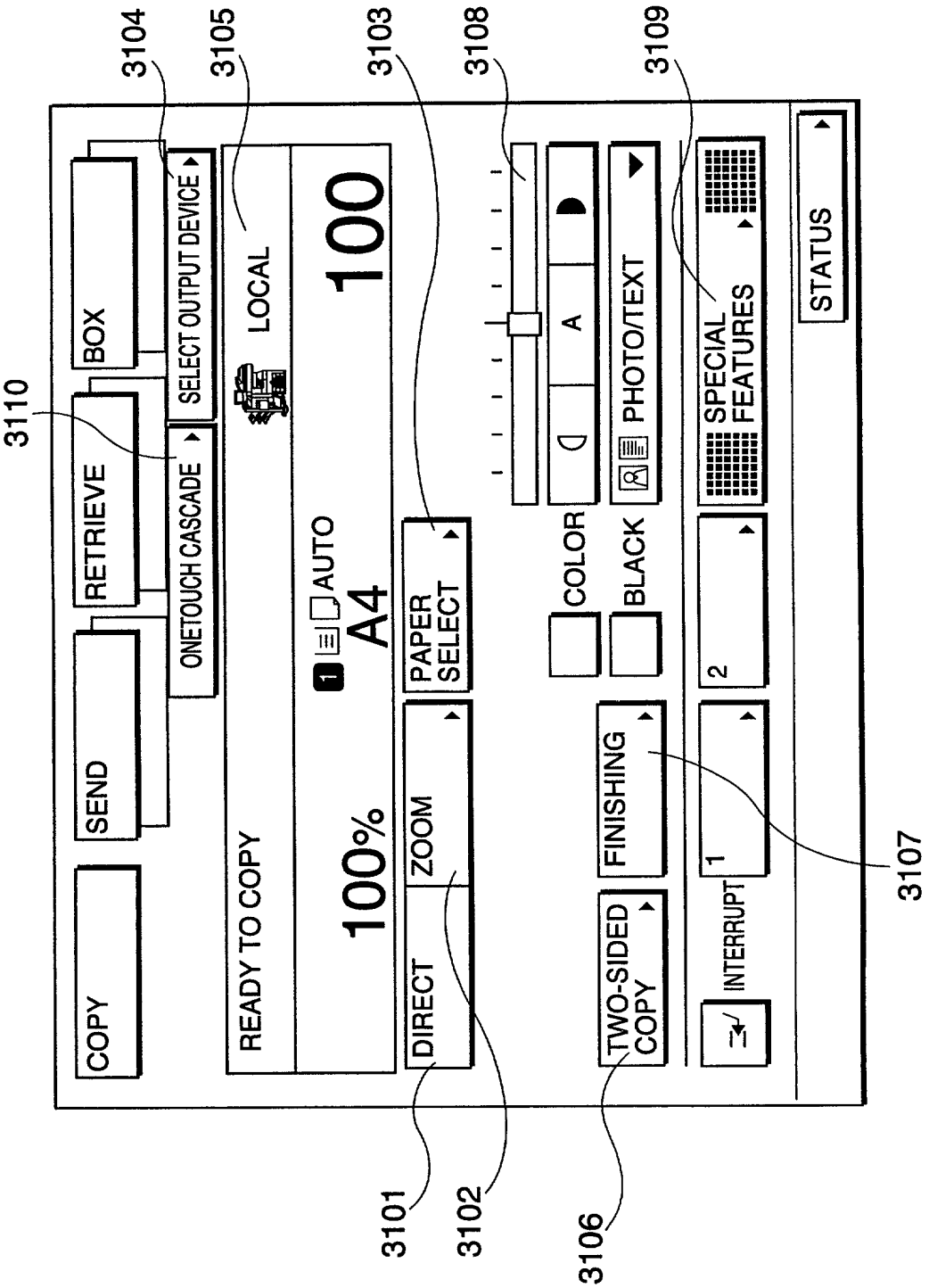

COPY
SEND
RETRIEVE
BOX
ONETOUCH CASCADE
SELECT OUTPUT DEVICE
LOCAL
READY TO COPY
100%
AUTO
A4
100
DIRECT
ZOOM
PAPER SELECT
COLOR
BLACK
PHOTO/TEXT
SPECIAL FEATURES
TWO-SIDED COPY
FINISHING
INTERRUPT
STATUS
3101
3102
3103
3104
3105
3106
3107
3108
3109
3110

FIG. 14

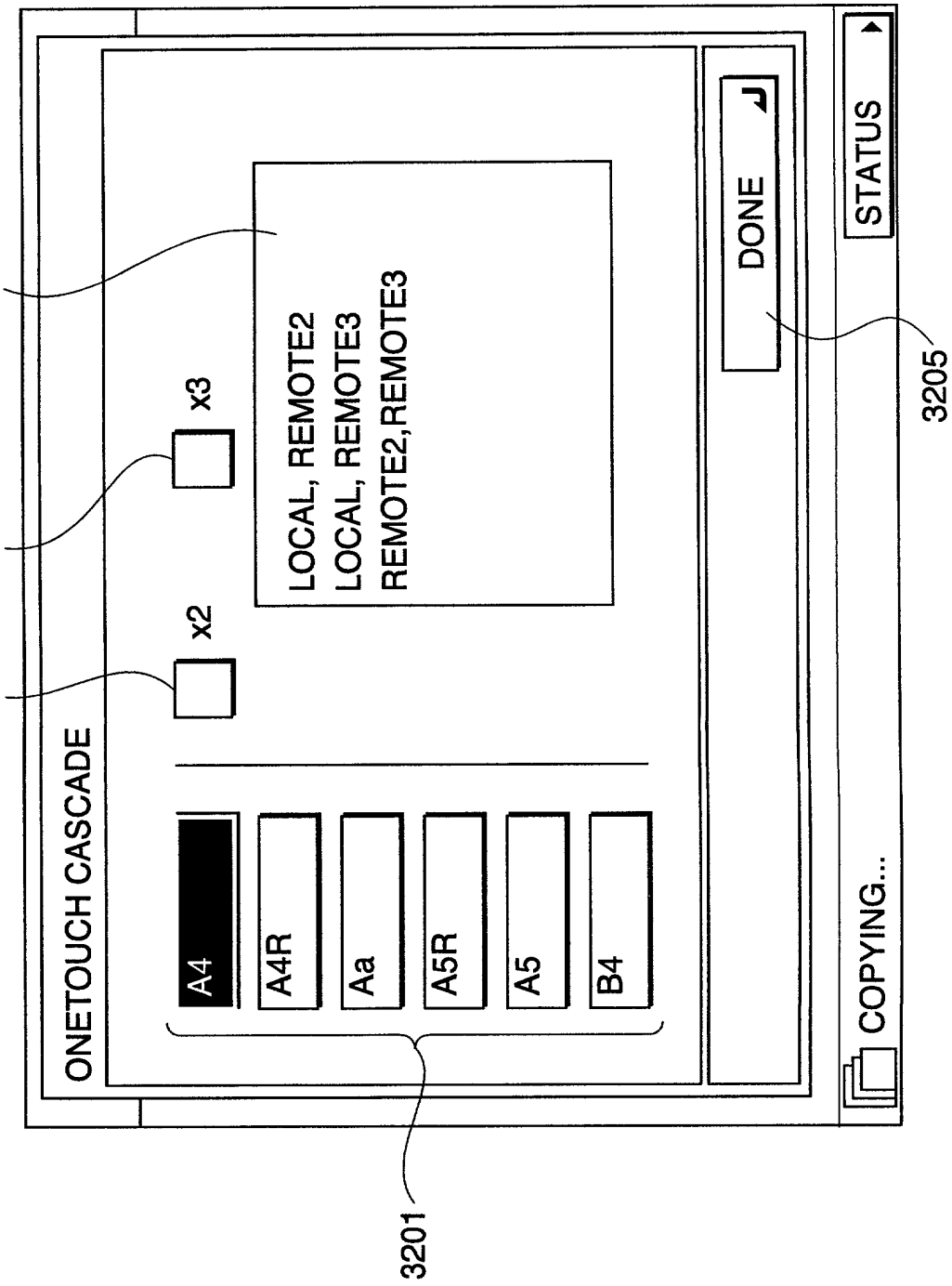

3204
3203
3202
3201
3205
ONETOUCH CASCADE
x2
x3
LOCAL, REMOTE2
LOCAL, REMOTE3
REMOTE2,REMOTE3
A4
A4R
Aa
A5R
A5
B4
DONE
STATUS
COPYING...

FIG. 15

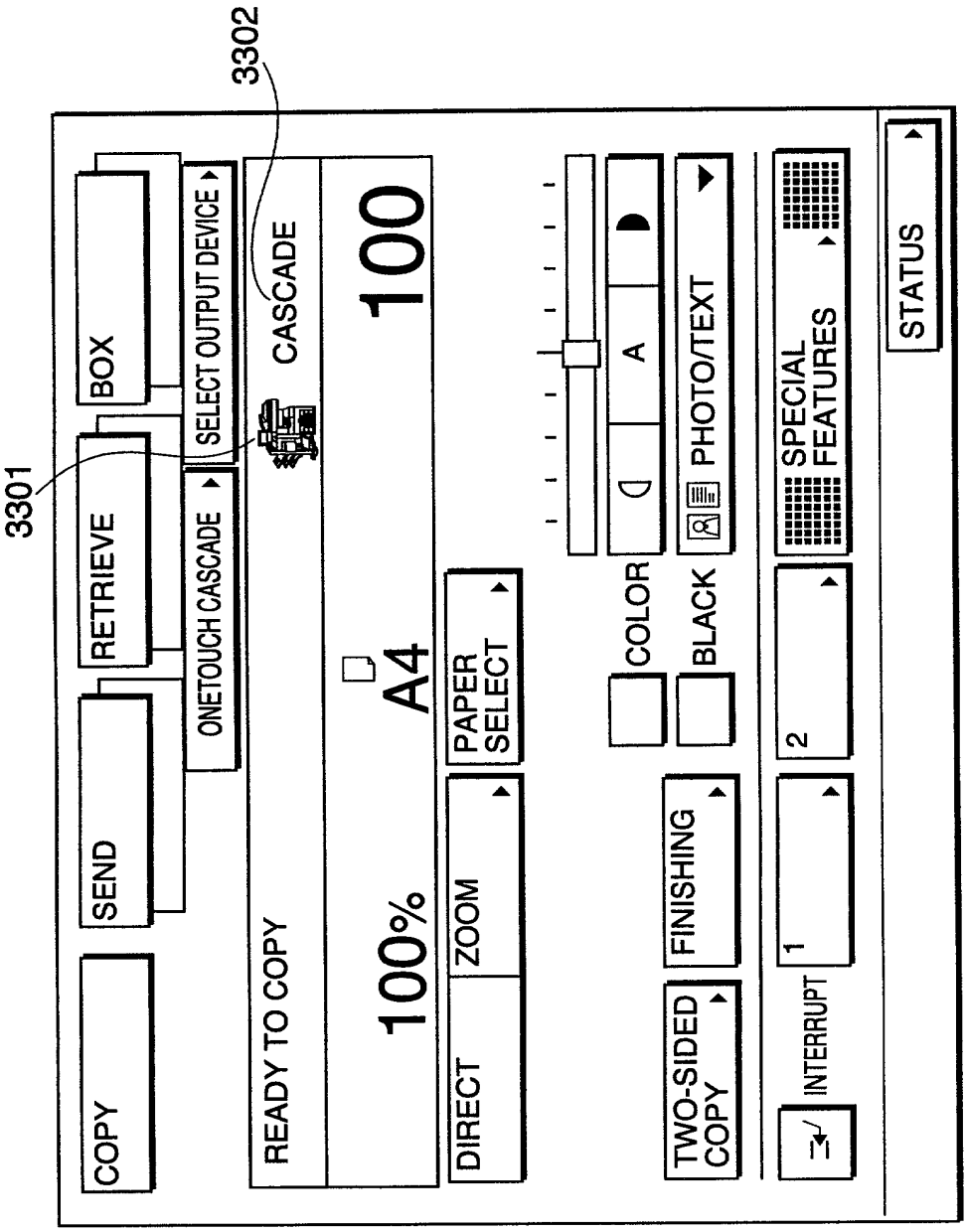

3301
3302
COPY
SEND
RETRIEVE
BOX
ONETOUCH CASCADE
SELECT OUTPUT DEVICE
CASCADE
READY TO COPY
100%
A4
100
DIRECT
ZOOM
PAPER SELECT
COLOR
A
BLACK
PHOTO/TEXT
TWO-SIDED COPY
FINISHING
SPECIAL FEATURES
INTERRUPT
1
2
STATUS

FIG. 16

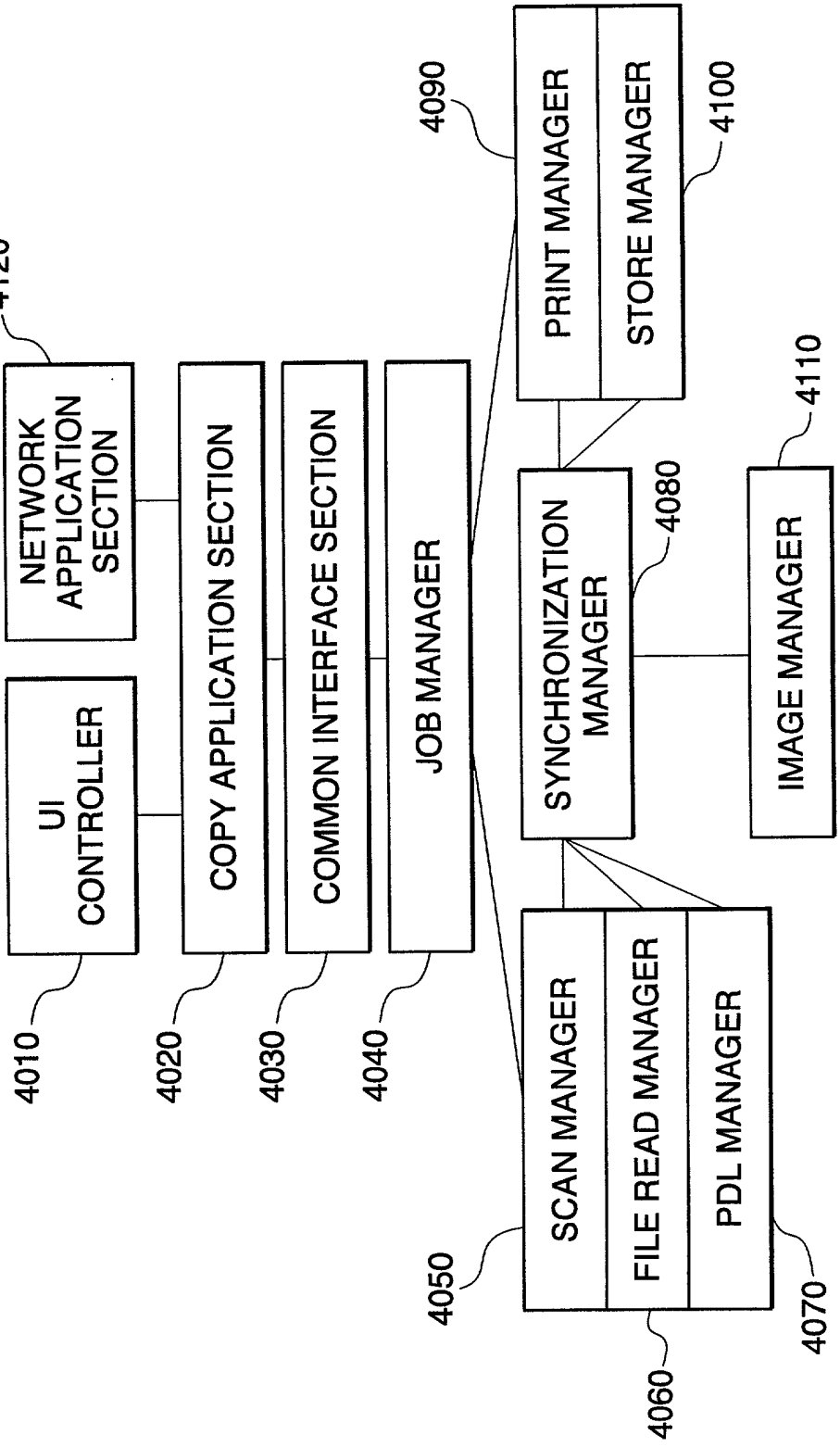
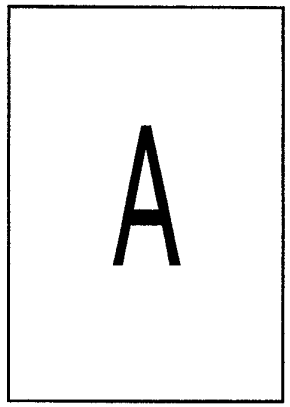

4120
NETWORK APPLICATION SECTION
UI CONTROLLER
COPY APPLICATION SECTION
COMMON INTERFACE SECTION
JOB MANAGER
4010
4020
4030
4040
4090
PRINT MANAGER
STORE MANAGER
4100
SYNCHRONIZATION MANAGER
4080
IMAGE MANAGER
4110
SCAN MANAGER
FILE READ MANAGER
PDL MANAGER
4050
4060
4070

FIG. 17

TAG NAME	SIZE	VALUE
SubFile Type	LONG	1
ImageWidth	SHORT	7040
ImageLength	SHORT	4960
BitsPerSample	SHORT	1
Compression	SHORT	4
Photometric	SHORT	0
FillOrder	SHORT	1
StripOffsets	LONG	384
Orientation	SHORT	1
SamplesPerPixel	SHORT	1
RowsPerStrip	LONG	2338
StripByteCounts	LONG	25526
Xresolution	RATIONAL	600
Yresolution	RATIONAL	600
PlanarConfig	SHORT	1
Group3Options	LONG	0
ResolutionUnit	SHORT	2
MarginTop(*1)	BYTE	0
MarginBtm(*1)	BYTE	4
MarginLft(*1)	BYTE	0
MarginRit(*1)	BYTE	31
ImageKind(*2)	LONG	0
MediaCode(*3)	LONG	1
Side(*4)	BYTE	0
WithoutZoomW(*1)	SHORT	7015
WithoutZoomL(*1)	SHORT	4960

(*1) IN NUMBER OF PIXELS
(*2) 0:TEXT, 1:TEXT/PHOTO, 2:PHOTO
(*3) CODE FOR ORIGINAL SIZE
(*4) 0: ORIGINAL FRONT, 1: ORIGINAL BACK

FIG. 18A



ORIGINAL IMAGE

FIG. 18B

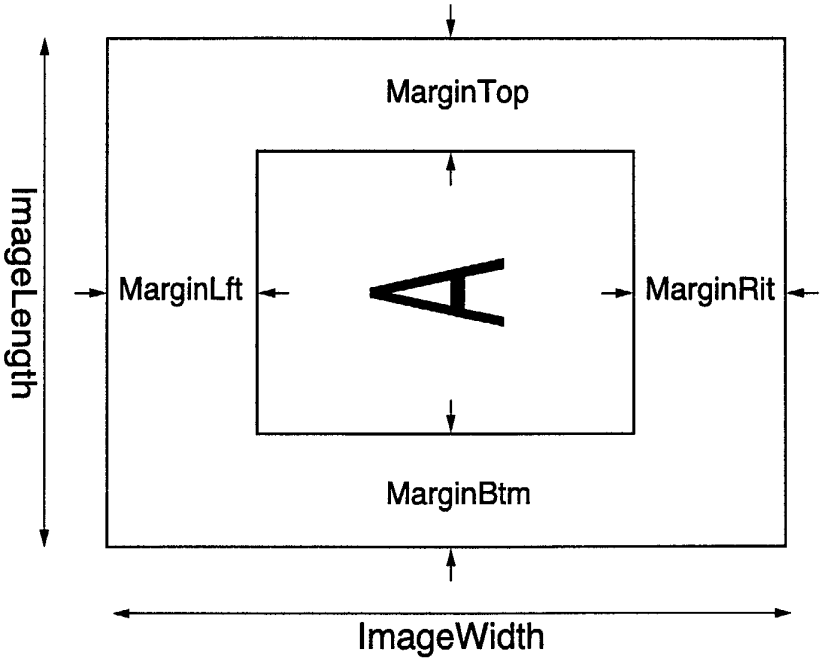


FIG. 19B

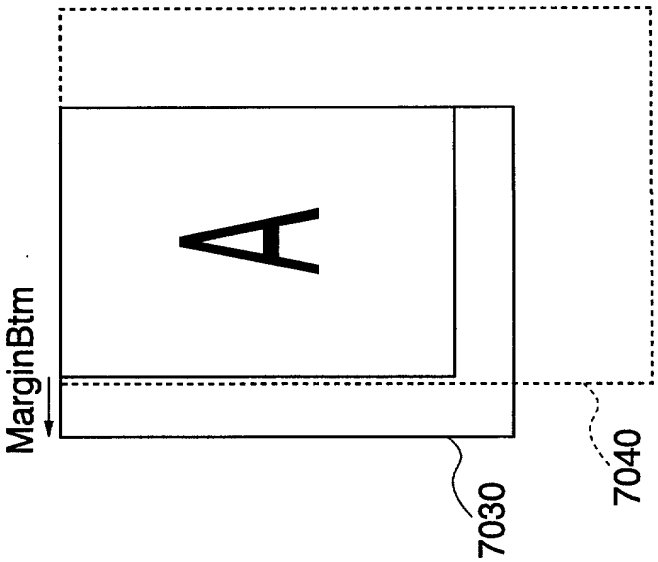


FIG. 19A

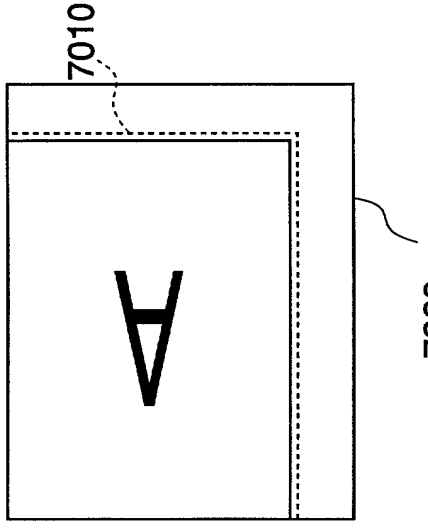


FIG. 20

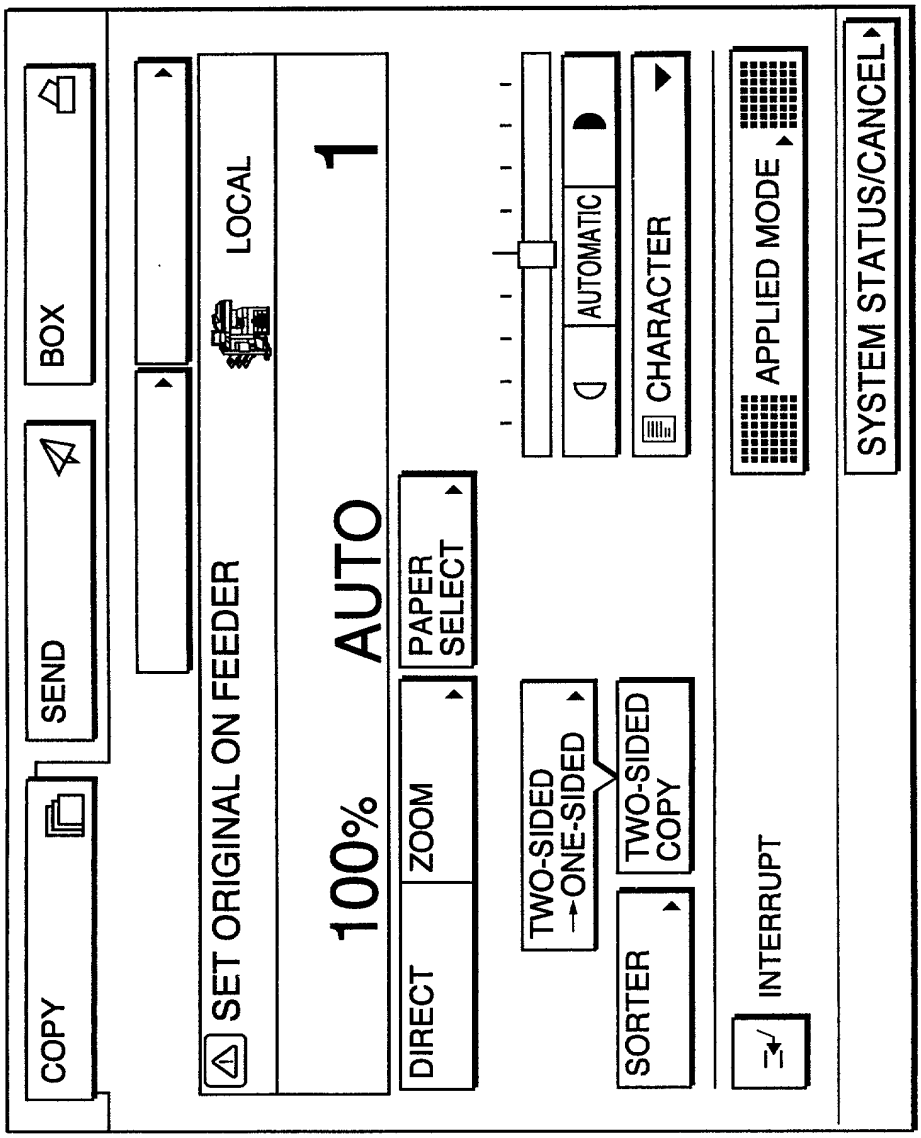

COPY
SEND
BOX
SET ORIGINAL ON FEEDER
LOCAL
100%
AUTO
1
DIRECT
ZOOM
PAPER SELECT
TWO-SIDED →ONE-SIDED
AUTOMATIC
CHARACTER
SORTER
TWO-SIDED COPY
APPLIED MODE
INTERRUPT
SYSTEM STATUS/CANCEL

FIG. 21

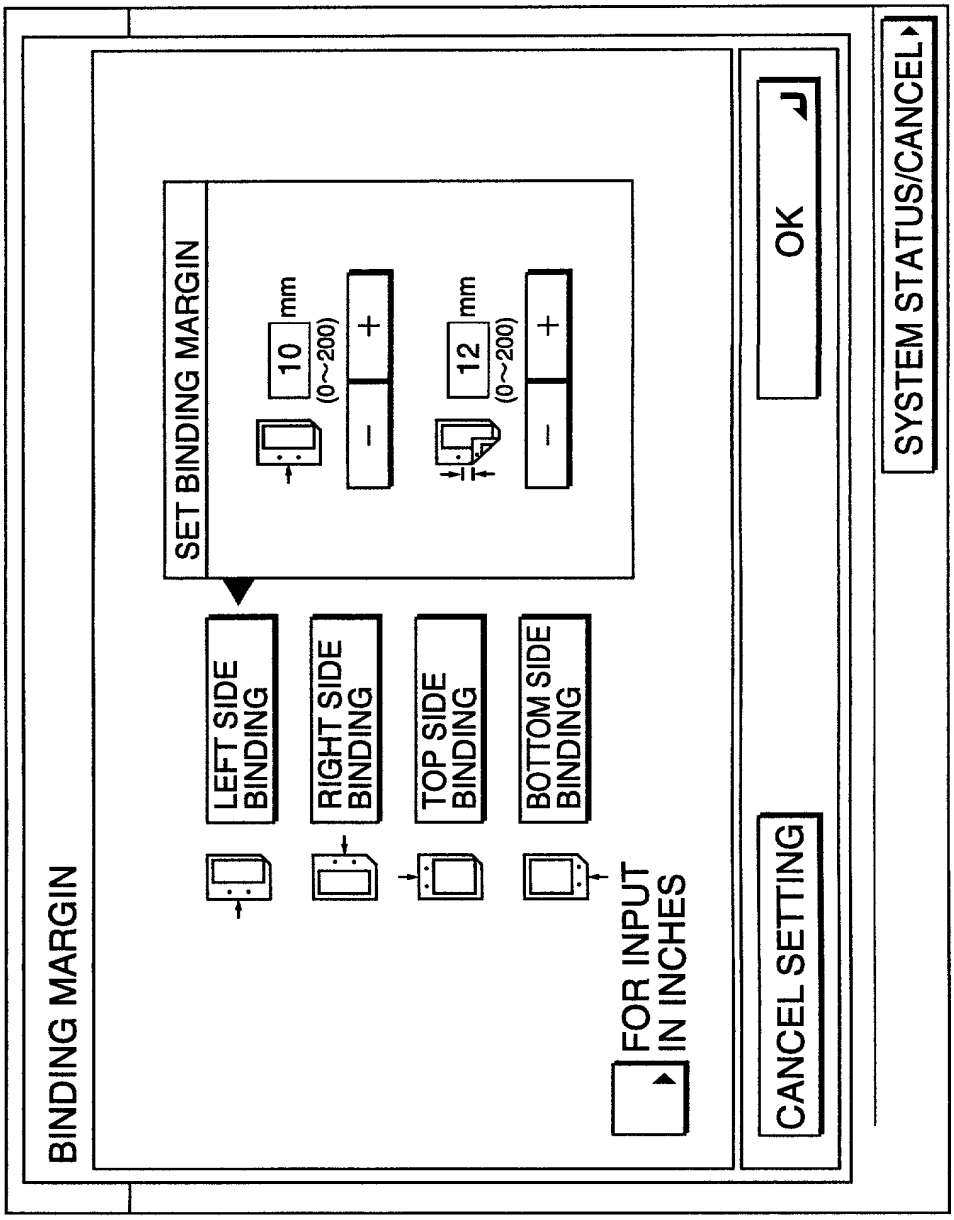

BINDING MARGIN
SET BINDING MARGIN
LEFT SIDE BINDING
RIGHT SIDE BINDING
TOP SIDE BINDING
BOTTOM SIDE BINDING
10 mm (0~200)
12 mm (0~200)
FOR INPUT IN INCHES
CANCEL SETTING
OK
SYSTEM STATUS/CANCEL

FIG. 22A

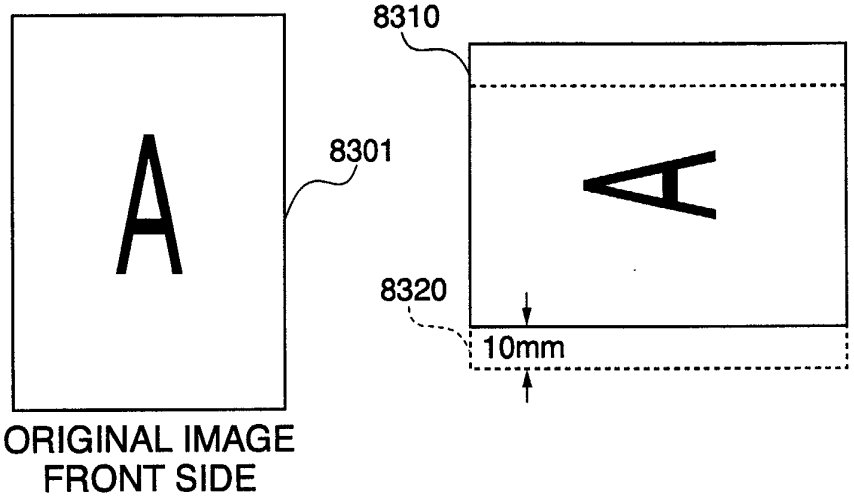


FIG. 22B

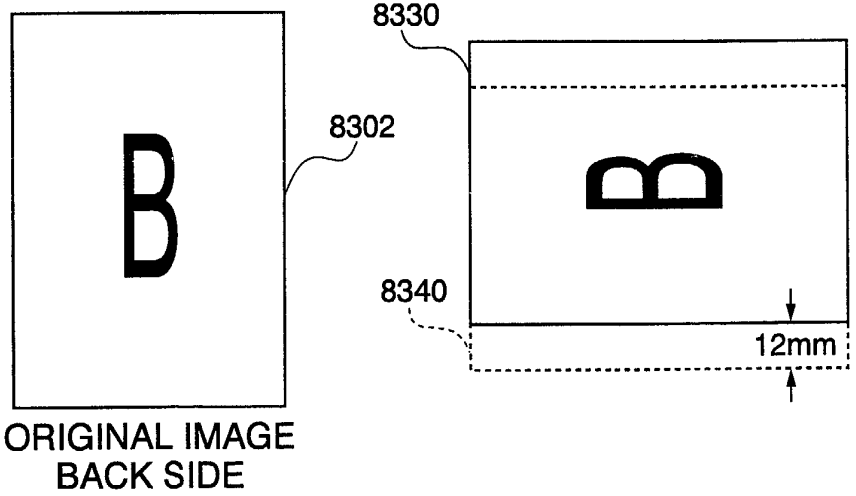


FIG. 23

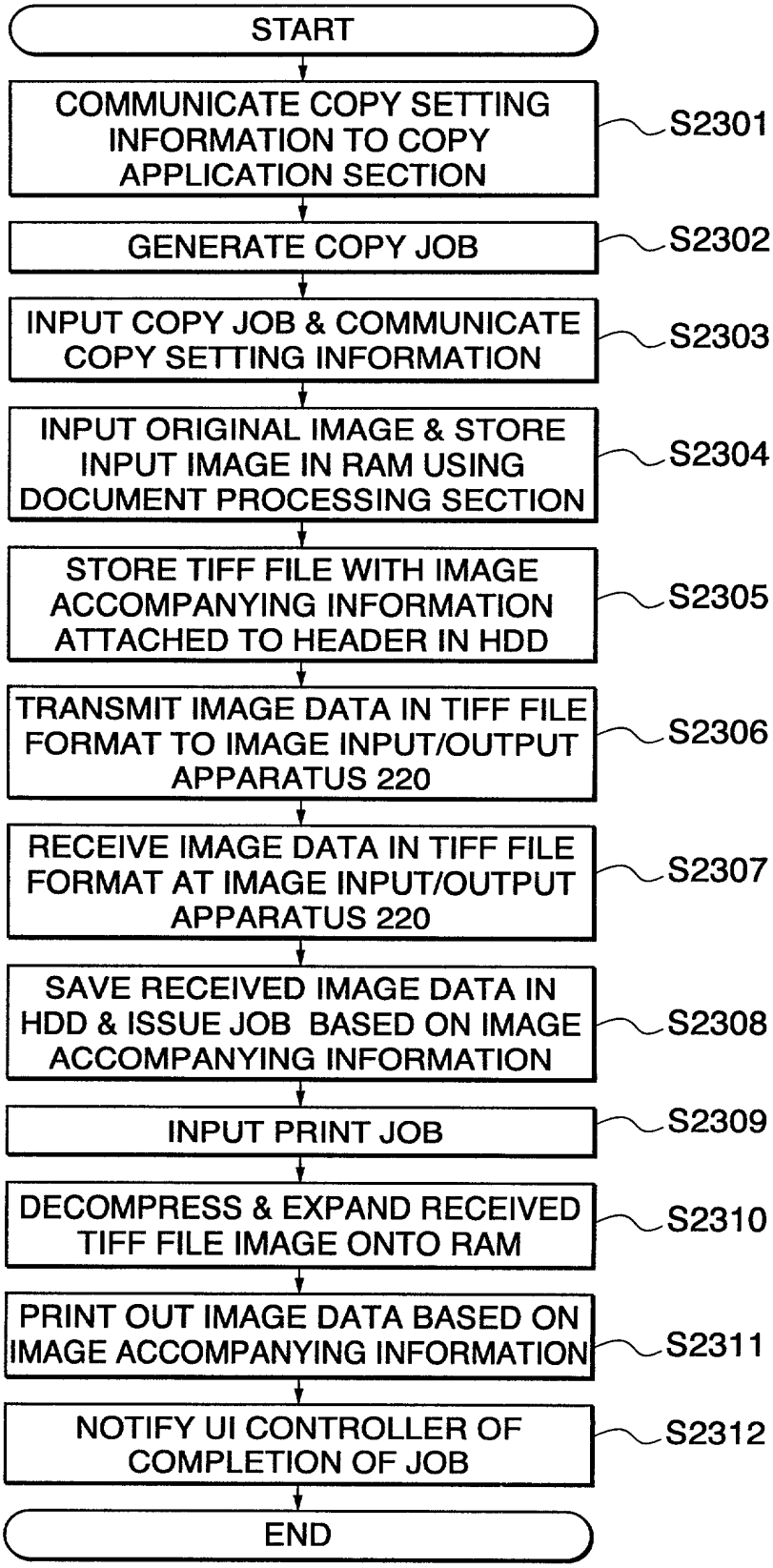

START
COMMUNICATE COPY SETTING INFORMATION TO COPY APPLICATION SECTION
S2301
GENERATE COPY JOB
S2302
INPUT COPY JOB & COMMUNICATE COPY SETTING INFORMATION
S2303
INPUT ORIGINAL IMAGE & STORE INPUT IMAGE IN RAM USING DOCUMENT PROCESSING SECTION
S2304
STORE TIFF FILE WITH IMAGE ACCOMPANYING INFORMATION ATTACHED TO HEADER IN HDD
S2305
TRANSMIT IMAGE DATA IN TIFF FILE FORMAT TO IMAGE INPUT/OUTPUT APPARATUS 220
S2306
RECEIVE IMAGE DATA IN TIFF FILE FORMAT AT IMAGE INPUT/OUTPUT APPARATUS 220
S2307
SAVE RECEIVED IMAGE DATA IN HDD & ISSUE JOB BASED ON IMAGE ACCOMPANYING INFORMATION
S2308
INPUT PRINT JOB
S2309
DECOMPRESS & EXPAND RECEIVED TIFF FILE IMAGE ONTO RAM
S2310
PRINT OUT IMAGE DATA BASED ON IMAGE ACCOMPANYING INFORMATION
S2311
NOTIFY UI CONTROLLER OF COMPLETION OF JOB
S2312
END

FIG. 24

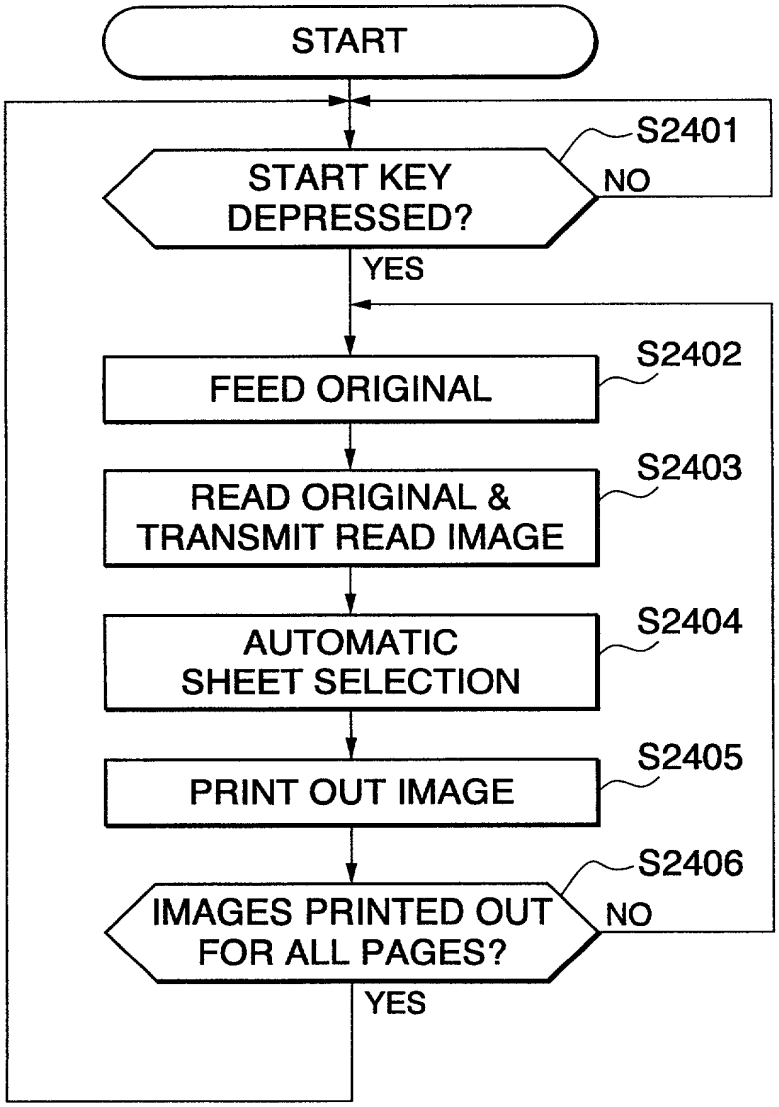

START
S2401
START KEY DEPRESSED?
NO
YES
S2402
FEED ORIGINAL
S2403
READ ORIGINAL & TRANSMIT READ IMAGE
S2404
AUTOMATIC SHEET SELECTION
S2405
PRINT OUT IMAGE
S2406
IMAGES PRINTED OUT FOR ALL PAGES?
NO
YES

FIG. 25

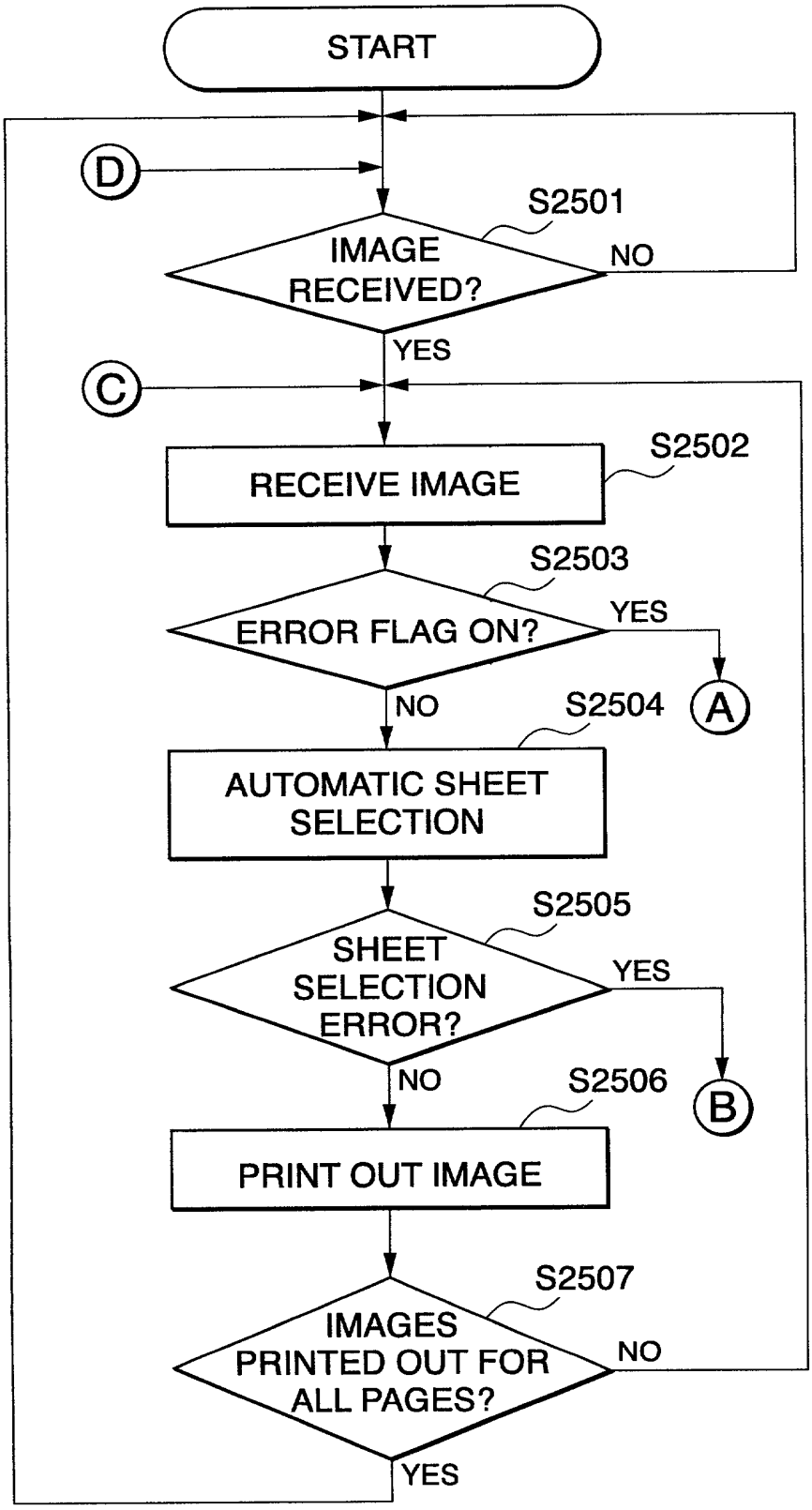
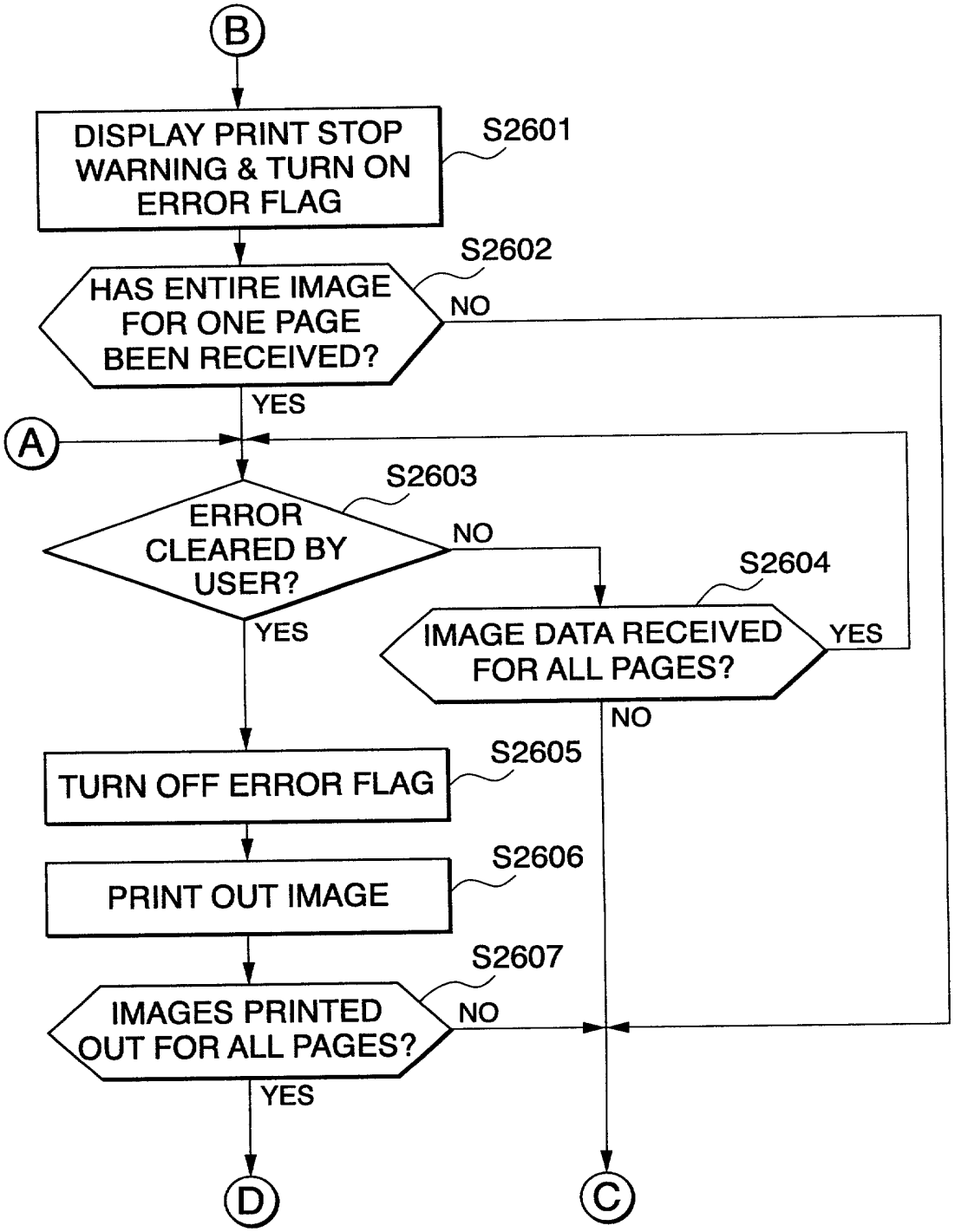

START
D
S2501
IMAGE RECEIVED?
NO
YES
C
S2502
RECEIVE IMAGE
S2503
ERROR FLAG ON?
YES
A
NO
S2504
AUTOMATIC SHEET SELECTION
S2505
SHEET SELECTION ERROR?
YES
B
NO
S2506
PRINT OUT IMAGE
S2507
IMAGES PRINTED OUT FOR ALL PAGES?
NO
YES

FIG. 26


B
DISPLAY PRINT STOP WARNING & TURN ON ERROR FLAG
S2601
HAS ENTIRE IMAGE FOR ONE PAGE BEEN RECEIVED?
S2602
NO
YES
A
ERROR CLEARED BY USER?
S2603
NO
YES
IMAGE DATA RECEIVED FOR ALL PAGES?
S2604
YES
NO
TURN OFF ERROR FLAG
S2605
PRINT OUT IMAGE
S2606
IMAGES PRINTED OUT FOR ALL PAGES?
S2607
NO
YES
D
C